

Supplementary file

Highlights

- Cyclophosphamide-induced hemorrhagic cystitis (HC) in rabbits.
- Mesna + manuka honey (MMH) decreased urinary bladder inflammation and fibrosis.
- MMH regimen increased antioxidant activity of GPx1, SOD3, and CAT enzymes
- MMH regimen decreased proinflammatory cytokines (NF- κ B, TNF- α , IL-1B, and IL-6).
- MMH regimen could be an effective therapy against cyclophosphamide-induced HC

Graphical abstract

Induction of hemorrhagic cystitis by cyclophosphamide (50 mg/kg /week) in the second group (G2) for 3 weeks

Protection against hemorrhagic cystitis by mesna (21 mg/kg/week) and manuka honey (1 gm/kg/day) for 3 weeks in the fourth group (G4)

